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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/529,784	06/23/2000	Otto Hofstetter	24140	3739

7590 11/20/2002

Nath & Associates
Sixth Floor
1030 15th Street NW
Washington, DC 20005

EXAMINER
SHIPSIDES, GEOFFREY P

ART UNIT	PAPER NUMBER
1732	13

DATE MAILED: 11/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/529,784	Applicant(s) HOFSTETTER ET AL.	
	Examiner Geoffrey P. Shipsides	Art Unit 1732	

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondenc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 August 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-25* is/are pending in the application.

4a) Of the above claim(s) *19-22* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-18 and 23-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I in Paper No. 12 is acknowledged. The traversal is on the ground(s) that a lack of unity between the apparatus claims and the method claims does not exist because each of the product-by-process claims depend from a method claim. This is not found persuasive because product type claims are not considered for method step type limitations, but only for the physical characteristics of the final product. The mere fact that these product-by-process claims state dependency upon the method claims, the product claims do not contain all of the limitations of each method type claims from which it is dependent. Applicant further states that Canadian Patent No. 2, 201,415 does not disclose the special technical features" of the presently claimed invention. It is the examiner's position that the "special technical feature" of the presently claimed invention is only the structure of a multilayered bottle blank. This special technical feature is taught in Canadian Patent No. 2, 201,415 as well as U.S. Patent No. 4,990,301 (Krishnakumar et al. 1).

The requirement is still deemed proper and is therefore made FINAL.

With regard to the applicant's indication that the examiner did not provide a copy of EP 0799683 A, the examiner points out that this reference is part of the file in the International Search Report.

2. Claims 19-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Group II, there being no allowable generic or

linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 12.

3. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 17, 18 and 23-25 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 17 teaches the formation of a five layered preform by first injecting a surface forming material (A) through an outer nozzle, stopping the flow of the surface forming material (A) and then simultaneously injecting two other materials (B and C) through inner nozzles. It is unclear if the simultaneous injection of these two materials (B and C) is slightly off set. It is the examiner's understanding that starting the injection

of these two materials simultaneously would produce a four-layered preform (See Nakamura), but that a slightly off set injection timing of these two material would yield a five layered preform (See Krishnakumar et al. 1, Figures 10A and 10B). It is the examiner's belief that the applicant seems to teach the simultaneous starting and injection of both materials B and C, but the current application does not describe this process in such a way that would enable one skilled in the art to form a four layered preform through simultaneous injection of B and C if the flow of both materials are simultaneously started.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,990,301 (Krishnakumar et al. 1) in view of U.S. Patent No. 5,897,822 (van Manen et al.) and U.S. Patent No. 5,032,341 (Krishnakumar et al. 2).

Krishnakumar et al. 1 teaches a variety of methods for forming multilayered preforms (Figures) where different materials are fed through different concentric injection nozzles into a mold cavity wherein different sequences of injecting single and multiple materials at once into the mold cavity result in different configurations of the multilayered preform. Krishnakumar et al. 1 uses a multicomponent injection-molding tool that features hot runner nozzles and a needle shut-off mechanism (Figure 1,

Column 1, lines 18-23). Krishnakumar et al. 1 teaches that: "there are four flow passages. However, the number may be more or less as so desired." (Column 2, line 42-44). Krishnakumar et al. 1 teaches that the "gates 32, 36,40, 44 are selectively closed in sequence by a gate pin 46 which is positioned by means of a positioning devide [sic] 48 which is automatically controlled." (Column 2, lines 65-68)

With regard to claims 13, Krishnakumar et al. 1 teaches several embodiments where the surface forming material (PET) is injected through the center nozzle and where the surface forming material (PET) is first injected singly followed by the injection of secondary materials through more outward nozzles to form core forming materials either with or without the PET through the central nozzle continued to be injected (Figures 2A, 2B, 5A, 5B, 8A, 8B, 9A, 9B, 10A, 10B, 11A, 11B, 12A, 12B).

Krishnakumar et al. 1 does not specifically teach a final step of injecting core forming material to fill the space created by material shrinkage after the first injection steps. Van Manen et al., however, teaches the addition of material to a mold cavity after the mold cavity is filled and cooled to completely fill the mold cavity following the cooling and shrinkage of the material originally used to fill the mold cavity (Figures 9 and 16, Column 8, lines 7-41).

Krishnakumar et al. 1 does not specifically teach the use of recycled material for use as a core material but does teach the use of PET RG as a core material, but does not specify what constitutes PET RG. Krishnakumar et al. 2, however, in a similar process teaches the use of virgin PET for the skin forming material A and recycled PET for core forming material B (Column 3, lines 55-62). Krishnakumar et al. 2 further

teaches that "material A would constitute 40-60% of the volume of the preform 24 while the material B would constitute the remainder of the volume" (Column 3, lines 63-67).

It would have been obvious to one having ordinary skill in the art at the time of invention to produce a preform by the method as taught by Krishnakumar et al. 1 of first injecting a PET material alone through a central nozzle to form the outer layers of the preform followed by injecting a second material through a more outward nozzle to form an internal layer with the modification of allowing the material injected to cool and injecting more material into the mold cavity to fill space created by the shrinkage due to cooling of the original material injected as taught by van Manen et al. in order to create a multilayered preform with the structure as taught by Krishnakumar et al. 1 that exactly fills the mold cavity and does not have imperfections due to the shrinkage of the material during cooling. It would have further been obvious to one having ordinary skill in the art at the time of invention to use the core forming material to fill the space created by the material shrinkage as the material injected in the step as taught by Manen et al. would intrinsically also fill into the interior of the formed article. It would have been further obvious to one having ordinary skill in the art at the time of invention to perform the method as taught by Krishnakumar et al. 1 with the a molding tool as taught by either Krishnakumar et al. 1 or van Manen et al. and to use either mold tool in such a way as to selectively open and close different material flows in order to perform the method of Krishnakumar et al. 1 with available molding tools. It would have been further obvious to one having ordinary skill in the art at the time of invention to use virgin PET as the outer layer forming material and to use recycled PET as the core forming

layer as taught by Krishnakumar et al. 2 with the relative percentage of these materials as taught by Krishnakumar et al. 2 in order to reduce the material cost of the preform while maintaining the complete outer coverage of virgin material as required by food and beverage handling and packaging standards, and to use recycled material as the material injected after cooling as taught by van Manen et al. in order to avoid use of the more expensive virgin PET as the material injected after cooling will not be exposed to the inside of the preform.

It is further noted that the instant claim language of instant claim 13 does not teach that the flow of the surface forming material stops during the flow of the core forming material in the second step.

With regard to claims 14-16, Krishnakumar et al. 1 teaches various embodiments of injecting different materials at different times to yield different multilayered preforms. Krishnakumar et al. 1 teaches one embodiment where the flow of the surface forming material is stopped prior to the flow of core forming materials from outer nozzles (Figures 10A and 10B). It would have been obvious to one having ordinary skill in the art at the time of invention to stop the flow of the surface forming material in the process taught by Krishnakumar et al. 1 in embodiment Figures 10A and 10B to stop the flow of the surface forming material in the inner nozzle by the moving of the pin in the molding tools as taught by Krishnakumar et al. 1 or van Manen et al. in order to easily stop the flow of the surface forming material.

8. Claims 17-18 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,141,695 (Nakamura) in view of U.S. Patent No.

4,990,301 (Krishnakumar et al. 1), U.S. Patent No. 5,897,822 (van Manen et al.), and U.S. Patent No. 5,032,341 (Krishnakumar et al. 2).

The discussion of Krishnakumar et al. 1, van Manen et al., and Krishnakumar et al. 2 above applies herein.

Nakamura teaches methods for forming layered preforms for blow-molding bottles of consumer goods. Nakamura teaches that "where a bottomed parison having a four-layered section is injection-molded, the injection of the first molten resin 6a is effected first in a manner similar to the previous description. Next, the aforesaid injection is stopped, and the second molten resin 7a and the third molten resin 8a are concurrently injected and introduced under pressure into the first molten resin 6a." (Column 4, lines 40-46). Nakamura further teaches that the "the first molten resin 6a may comprise polyethyleneterephthalate, the third molten resin 8a comprise resins having gas barrier property such as ethylene vinyl alcohol, polyamide, etc., and the second molten resin 7a comprise a blend resin" (Column 4, line 67- Column 5, line 5). Polyamides are commonly known as nylons. Nakamura teaches, "wall-thickness distributions of the layers can also be adjusted by suitably selecting and controlling the injection conditions.

With regard to claims 17 and 23-25, Nakamura teaches both four and five layered preforms. Although Nakamura teaches that the simultaneous injection of second and third molten resins (7a and 8a) produces a four layered preform, it is clear from Figures 10A and 10B of Krishnakumar et al. 1 that the simultaneous (although slightly offset) injection of core forming materials can and would form a five layered

preform. It would have been obvious to one having ordinary skill in the art at the time of invention to modify the process of Nakamura by slightly offsetting the simultaneous injection of the second and third molten resins (7a and 8a) in order to form a five layered preform with the structure as taught by Krishnakumar et al. 1.

Nakamura does not teach the second molten resin to be of recycled material. Krishnakumar et al. 2, however, teaches a multi-layered preform where virgin PET material is used to produce the outer surface layers of a preform and where the inner materials "may be selected from a variety of materials including colored PET, recycled PET, MXD-6 nylon; copolyesters, polypropylene (PP), PP/PET blend, polyacrylonitrile polycarbonate, and the like." (Column 3, lines 55-62). Krishnakumar et al. 2 further teaches the outer material to consist of 40-60 % and the other materials to range from 30 – 40 % and 10 – 20 % respectively (Column 3, line 63- Column 4, line 4).

Nakamura also does not specifically teach the mold tool used and how the material flows are controlled. Krishnakumar et al. 1 and van Manen et al. both teach co-injection molds for such preforms that use a needle to selectively control the flows of materials as discussed above.

Nakamura also does not specifically teach a secondary injection of recycled material into the mold cavity following the cooling of the originally molded material to compensate for the shrinkage of the material during cooling. Van Manen et al. teaches the injection of material to compensate for the shrinkage as discussed above.

It would have been obvious to one having ordinary skill in the art at the time of invention to produce a multi-layered preform as taught by Nakamura out of layers of

virgin PET as a surface layer as taught by Krishnakumar et al. 2, a barrier layer as taught by Nakamura, and a layer of recycled PET as taught by Krishnakumar et al. 2 in order to use the method as taught by Nakamura to produce a structure as taught by Krishnakumar et al. 2 with barrier properties in a cost effective manner. It would have been further obvious to one having ordinary skill in the art at the time of invention to use a mold tool as taught by Krishnakumar et al. 1 or van Manen et al. to preform the procedure as taught by Nakamura in order to have precise control over the selective injection of each material through each nozzle by the movement of a supply control needle. It would have been further obvious to one having ordinary skill in the art at the time of invention to modify the process as taught by Nakamura by injecting material into the cavity after the material has cooled in order to compensate for shrinkage of the material due to cooling as taught by van Manen et al. and to inject recycled material in order to reduce costs as the material injected after the cooling step will not be exposed to the inner surface of the formed preform.

With regard to claim 18, Nakamura does not specifically teach the percentage composition of the preform in regards to material but does teach that the layer thickness distribution can be varied with molding conditions. Krishnakumar et al. 2 teaches the outer material to consist of 40-60 % and the other materials to range from 30 – 40 % and 10 – 20 % respectively (Column 3, line 63- Column 4, line 4). Krishnakumar et al. 1 teaches different layer thickness distributions for different molding conditions, and has conditions where a thin layer of barrier material is produced with a range that includes 5% of the thickness of the overall preform. The percent thickness of a layered object

would approximately equal the volume percentage. It would have been obvious to one having ordinary skill in the art at the time of invention to produce a layered preform according to the method as taught by Nakamura with a layer thickness distribution that minimizes cost and gives the most desirable properties to the finished product and the exact thickness distribution would be a result effective variable based upon the unclaimed variables of cost of the materials used, temperature of the molten resins, time per molding cycle, etc. and it would have been obvious to determine the thickness distribution through routine experimentation.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey P. Shipsides whose telephone number is 703-306-0311. The examiner can normally be reached on Monday - Friday 9 AM till 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jan H Silbaugh can be reached on 703-308-3829. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Geoffrey P. Shipsides/gps
November 18, 2002

JAN H. SILBAUGH
SUPERVISORY PATENT EXAMINER
ART UNIT 1732

11/18/02